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AGRICULTURAL.

Making Farms Worth More.

When a farmer buys a farm, one of his first thoughts is how he can increase its value, and thereby, of course, increase his wealth. Making the soil richer seems at first to be the only way. But to make an entire farm richer while constantly cropping and selling produce from it is up-hill work. In most cases, on new land what the farmer does to make it more productive results in lessening soil fertility. For a long time the farm may be steadily growing poorer, while it is each year producing bigger crops and giving its owner a larger income. All the manure the farmer applies has its value returned in one or two crops, and these take also from the soil some of the fertility that the manure itself did not supply to them. Wherever phosphate and potash have become so exhausted that grain crops cannot be grown without an application of these minerals to each crop, farmers have adopted that method. They manure for the crop rather than for the land, and feel well satisfied if in each crop the money value of the fertilizer is used is returned with fair profit.

But there are other ways than making land rich to increase its value. Land will always sell for what it will pay the interest on after defraying the cost of cultivation. Sometimes better cultivation alone will do this, though always with this better cultivation comes more rapid soil exhaustion. It is the farmer's business to exhaust fertility. This is the way he gets his living. He takes fertility as the raw material that nature furnishes, and turns it into as many forms as he chooses, and of kinds that will most likely give him a profit. If he has energy and skill in doing this the farmer grows rich, and the fact that it is the farm that has made him rich makes the farm more valuable than it was before. People will always believe that what one man has done some one else may repeat. Thus often the introduction of a new crop that proves well adapted to the land and the climate is the cause of increased wealth, not merely to one individual but to all the farmers in the neighborhood. The discovery that low, mucky land in western Michigan was adapted to growing celery is an instance of this. The setting apart of rough land along the shores of the deep small lakes in western New York for grape growing is another instance. It should be every farmer's study to find new and profitable crops, so that he can secure a much greater income from land. In proportion as he does this he will be successful.

But success to the farmer is after all more apt to come to him incidentally than from the direct product of his land. He finds it necessary from the first to stock his farm with domestic animals that are required to working it, or to consume products that are otherwise unmarketable. This stock increases, and the farmer finds income from the sale of its surplus. After awhile, by better feeding, and ultimately by better breeding, superior strains of stock are produced, which will command higher prices for the good reason that they will make so much better use of all that they consume. By the time a farmer is able to secure or to breed stock of this character, his care becomes more important to him than that. If his land will not produce enough for his stock or can be put to better use, he will buy grain and feed to it, producing only corn fodder and some clover for coarse feed to go with the grain. This has been the result in scores, and even hundreds, of farms, whose owners set to work at improving their stock as an easier way of making money than improving the land, and are surprised after a few years of improved stock growing to find that they have made their land so rich that it can be put to uses that at first they had not expected.

There are thousands of farmers whose land is poor, and try the best they may, they cannot get manure enough to make it rich. If they increase crops by more thorough cultivation they find that while temporarily their profits are larger, it is at the expense

of greater soil exhaustion, that must be compensated for afterward. Why do not they cease thinking so much about their land and crops, and pay more attention to their farm stock? If they keep largely of young animals such stock doubles in numbers very quickly, and if it is properly bred it will double in value in the same time. Is not this a better outlook for profit than relying on making something from a crop which the land has produced after paying all the expenses of plowing, planting, cultivation, protection from insects and blight, harvesting and marketing? When a farmer once realizes what he has to do before he can grow a crop and put it into money, he will be apt to wonder how he ever came to think of making money that way. If he does make any money, he has certainly earned it all.

It is often said that some men work hard all their lives and after all have nothing to show for it, while others who take things more easily find wealth coming to them from unexpected sources. It is easy to guess if these different classes are farmers; that the man who works hardest and has least is the man who is consequently trying to make land rich, while all the time doing his best to get the largest crops from it; while the man who makes money easily has had the good sense to secure the best possible stock, and by its increase make both himself and his farm rich. This is the purpose that most farmers try to aim for, and with the easy plan of keeping valuable stock and letting it grow on their hands 50 to 100 per cent. every year plain before them, it seems surprising that more farmers do not succeed. The truth is, however, that there is as great difference in stock as to paying its way as there is in crop. Some stock never has paid and never will. To have this inferior stock double each year on a farmer's hands only results in making him each year poorer than he was before, because it is sure to eat more than it will ever be worth.

Making Most of Skim Milk.

It is now known that in removing the butter fats by taking off its cream, milk contains practically no practical loss of its nutritive value. Even for putting on fat the loss of the cream can for most animals be supplied in cheaper forms, not perhaps quite as digestible as the cream itself would have been, but producing quite satisfactory results. The nutrition in the skim milk cannot be so readily replaced. Hence the value of skim milk and the general desire to use as much of it as possible for young animals, which require for growth just the kind of nutrition that it furnishes. Probably more skim milk is fed to calves and to young pigs than to any other animals. It has only one drawback, it is hard to digest, especially if fed alone and cold. To dilute the milk, and at the same time combine it with carbonaceous nutrition by adding grain meal to it, should be the object of the feeder.

For poultry a milk curd which is produced by heating the milk, and when it comes thick, pressing the surplus water out of it, is much better than milk itself. Poultry will only eat a limited amount of either skimmed or whole milk, and it does not have the effect its chemical character would imply in increasing egg production. The feeding of milk to hens soon results usually on the milk becoming soured, and in the end the flock becomes subject to disease. Fresh curd dry and then mix with it hard oakes baked hard, and then made fine enough to be eaten, and the effect on egg production will very soon be felt after the new ration begins to be given. It is for young chickens that this ration is especially adapted, though some whole wheat should be fed with it, as, however hard the pieces of oatmeal cake, they are dissolved very quickly when they get into the fowl's gizzard in contact with the gastric juices, which are much more powerful in birds than in other animals.

There are, however, many places where curd cheese has too profitable a demand for human use to be afforded, except most sparingly for hens and chickens. It is liked by almost everybody, and the skim milk curd made into small rolls brings a good price, is greater than a great many farmers are able to sell whole milk for. We have known farmers to try making curd cheese out of whole milk. But there was too much fat in it and lacking the rennet to help fasten the fat with the casein, most of the fat is lost. Rabbies the skim milk curd cakes with cream, and letting them absorb what they will, helped to keep flies away and produced a better curd. The question, What is the most profitable use of skim milk? is a most important one in all dairies where butter is made. If cheese is the product, sold that removes all the casein of the milk, leaving the water, sugar and a small portion of the butter fat, none of which alone has much feeding value. But by adding grain feed to whey, hogs have been put into excellent condition as porkers, though so much sugar as the whey contains lessens its value as a feed for breeding animals.

How Much Fodder Per Acre?

One of the most interesting questions for a farmer who has much stock is what he can grow on his land that will produce the greatest amount of nutriment per acre. The ordinary yields of hay put that out of the question as an economical feed. It is a large yield of hay that produces two tons per acre, but this will give only a pound of dry fodder, and that not the richest, from 11 square feet of surface. In other words, two tons, or 4000 pounds of feed from 45 to 60 square feet, which an acre contains. It seems as if, with a good seedling, more hay than this ought to be produced on so large a surface. With clover, as much as three tons per acre, and even more, have been out

in a single crop, and clover will bear cutting always twice, and sometimes three and four times in a season, though the later cuttings do not yield so much as the first.

Undoubtedly the thoughts of most farmers turn to Indian corn as naturally the best crop to produce the largest returns in nutriment per acre. Twenty to 25 tons of green fodder have been grown with corn on rich land, and though much of this was water, it was sweetened water and contained considerable nutriment. Even at 25



ENGLISH PRIZE FAT SHORTHORN HEIFER.

tons per acre, there will be only a pound of fodder from each square foot of surface. It must not be supposed, however, that each square foot bears its stalk to contribute to such a result. The largest yields must leave some spaces between the rows to allow cultivation. It is probable, also, that the greatest value of nutriment will be found on corn whose stalks are far enough apart to produce some ears. A barren stalk, especially if crowded so that light does not get to it, remains tasteless all the season. So soon as the ears form, the stalk becomes sweet, and its sweetness of the stalk remains after the carbon in the grain has been changed to starch. When it is the practice to sow fodder corn on rich land, a large growth was often produced. But the stalks were white and worth very little as feed. Cattle always prefer to eat the larger and coarser stalks that had borne a crop of corn.

In Great Britain where Indian corn cannot be grown much greater yields by weight though not in bulk are produced in root crops. Rutabagas and mangels wurtzel have been grown there at the rate of over 30 tons per acre. But it requires a good deal of work to fit their large roots for economical feeding. They are too big for stock to do more than bite into them, and they are too hard for ruminant animals to do this profitably. We doubt whether roots will ever supersede corn as our main fodder crop in this country. Our soil and climate enable us to grow this crop more cheaply than it can be grown anywhere else. But as corn is not itself a good ration, it needs something else to be fed with it. Growing corn and clover in succession seems to meet this difficulty, and with the advantage that so long as the clover is growing it is increasing soil fertility rather than decreasing it. As many as four or five tons of clover hay have been cut from an acre in a year, and considering the nitrogenous nutrition in clover, it is the best of all feeds to balance the too carbonaceous corn ration.

Dairy Notes.

A heifer should always drop her first calf in the barn, and we would want her stabled nights, carded and brushed every day, and her teats and udder handled night and morning for some weeks before she calves. When this is done, and properly, that is gently done, there is seldom any trouble in handling her or milking her afterward, unless the teats get sore by the calf's teeth or by chapping.

If the calf is allowed to suck her, see that she is milked clean after he gets through, and that the teats are wiped dry, which will do much to prevent their being sore. If the udder or any part of it is hard or swollen, bathe it ten or fifteen minutes in warm water, and rub it dry, trying at the same time to draw any milk that may be in it, and if necessary repeat this process once or two hours. The practice of drawing away the milk before letting the calf suck that he may draw down the swollen teats may be efficacious sometimes, but it is too rude surgery to suit.

Give only warm water, about blood warm, to her or to any cow for a day or two after calving, and if she has not done well or has any fever, keep giving warm water while it lasts. A few drops of acetone may be given to reduce the fever, but medicine will not do much good if she is allowed to drink ice-cold water, to stand and shiver in a cold wind or a cold draught anywhere, or to lie out on the wet ground. Such treatment might lower the temperature until she was cold in death.

Board's Dairyman fears that too many of those who send their milk to the creamery are putting too much trust in the improvement which they expect to result from the modern methods of handling milk and cream, and perhaps the reputation of the

butter maker employed there, and are ceasing to make any effort for individual improvement.

We hope that this is not so. Where the price of the milk depends upon the amount of butter fat it may show, it is for their interest to have the best cows they can procure, and to study the principles of feeding in the best way and with the food best proportioned for butter making. This, then, would have only the points of absolute cleanliness of methods and utensils, and in

handling the milk, so that it may have no offensive odors or flavors added to it, and it would not seem a difficult matter to induce nearly every one of the patrons to be particular in this matter.

Yet the example of the creameries in Chester and Delaware counties in Pennsylvania, in organizing an association among the farmers, to meet regularly to discuss all matters connected with dairying and handling of dairy products, is one that might well be imitated in many sections. Few farmers have all the knowledge they need upon this branch of their business. Many of them do not take a paper devoted to dairy topics, and if they did, and took time to study it, they might fail to find just the information they most needed, or they might be bewildered among a multitude of counselors, not two of whom would be situated alike, or working under similar conditions.

They need to be better educated, or many of them do, in what are the best indications of a good cow, and how best to feed such forage and grain as they grow, and what they need to buy to add to it to make a profitable ration. They ought to learn how to select the best calves to raise, and how to grow them. They should study how best to use their skim milk after the factory has taken the fat from it. In these and many other points there are but few who cannot learn from some one of their neighbors, and but few who cannot impart a little knowledge gained by practical experience. A meeting together and discussing these matters should bring out such men who do not write to dairy papers, and who, among an association of friends, would give better and more detailed accounts of their methods than could be brought out in a newspaper article, and often it is these little seemingly unimportant details, so simple as to be almost forgotten until brought out by questioning, that contain the secret of success.

Do not understand us as undervaluing the agricultural or dairy newspaper. The fact that it covers a broader territory and obtains much scientific or expert knowledge that may not always be found in a locality of dairymen and farmers, gives it a value to those who will read and study it while, as we have said, some of its teachings may not be adapted to the locality or the conditions of some individual farmers.

Dr. Smead, a widely known veterinarian, says: "If there is danger of milk fever, commence two weeks before the cow drops her calf to feed salt and brimstone of soda; these will help to thin the blood. Do not dry up the milk until it naturally dries up. If you do, the food that makes milk will go to make blood, and this may cause milk fever."

Similar treatment, with the use of clover hay and bran mash, or other food slightly laxative for a few weeks before and after calving, and a little care to draw off some of the milk if the udder seems to be too full before calving, would act as an almost sure preventive of oaked or inflamed udder or garget. Under such treatment it would not be unusual as a result of a blow or bruise there, or a catching cold by lying upon the wet ground or standing in a cold draught.

A. X. Hyatt tells in the Indiana Farmer his opinion of the separator after using one five years. He bought it that he might be able to feed better the 20 calves a year that he desired to raise, and he says: "The separator gave us at least two pounds more butter a day than we could get by deep setting. We got from three to five pounds more butter a day by running it through the separator at home warm than we were credited with for the same milk at the creamery. Two hundred pounds of milk fresh from the cow and warm from the separator seemed to make more gain with young pigs and calves than double the pounds as we got it from the creamery. Microbes

and flies and rinsings do not seem to set well on the stomachs of young stock. The separator would save us a trip every morning to the creamery, and often an hour or two waiting for our milk. It would save our aerating and cooling our night's milk. It would save three or four cents for making our milk into butter, and we could get two or three cents more for our butter if we made it than Elgin prices, or from the factory."

That is strong testimony from a practical

Farmers' Buying and Selling.
It was a shrewd remark of an old farmer in the writer's boyhood, who owned only a few acres of land, that he was glad his farm was not large enough to take all his time or all his money. In fact, he made more profit taking short journeys and buying stock to be fattened and killed than he did from his crops. He was not a first-class farmer, could not well be while he neglected his land so much as he did. But long practice in buying enabled him to judge quickly what an animal would sell for at dressed weight, and he very rarely failed to make as much as five dollars for killing and marketing a steer, heifer or cow. He kept in his barn a set of scales and all the conveniences for killing and dressing a beef. Sometimes he bought other stock, sheep, pigs or poultry, and almost always with some profit, often a very large one. He did this largely because of his knowledge of the trade of a butcher, enabling him to kill and dress stock, and thus make a part of the profit that the butchers would make if it were sold to them.

Yet though most farmers will concede that there ought to be money in this kind of buying and selling, few of them attempt it. With most of them the trouble is that they cannot find time, though others distrust their ability to drive a sharp bargain both in buying and selling. Yet the capacity to judge what stock is worth is necessary for the farmer, or else he is extremely liable to be cheated in selling what he has himself grown. We have always held that every farmer should early be trained to judge the weight of various kinds of stock, practicing by making his guess, and then driving it on some near-by scales to test its accuracy. In this way it will not take long to teach a boy to judge the weight either alive or dressed of any kind of stock, and its value at market rates. The farmer who does this should early be trained to judge the weight of various kinds of stock, practicing by making his guess, and then driving it on some near-by scales to test its accuracy. In this way it will not take long to teach a boy to judge the weight either alive or dressed of any kind of stock, and its value at market rates. The farmer who does this should early be trained to judge the weight of various kinds of stock, practicing by making his guess, and then driving it on some near-by scales to test its accuracy.

Home Butter Making.

These home butter makers who wish to realize a neat profit from their labor for the evening season, should interrogate themselves somewhat as follows:

"Why will it pay me to buy the best brand of dairy salt obtainable, when it costs me more than a medium grade?"
Because of its perfect solubility and freedom from foreign matter. When a perfect dairy salt has been worked into butter it dissolves wholly and evenly, permeates the whole product after being properly distributed by the ladle. As a result a uniformly saline flavor is imparted to every atom, and the preservative qualities of the salt fully established throughout the mass.

This adds both keeping qualities and an improved flavor to the butter so treated, results that enhance its market value many times over the increased cost of the salt. A second-class grade of salt is not wholly soluble, and also contains foreign earthy matter lacking in preservative force. In eating butter where such salt is used it is not uncommon to feel the gritty particles under the tongue, and they are even perceptible to the eye in the grain of the butter. "Why will it pay me to use a cool dairy room, exclusively dedicated to milk and butter, and in which nothing foreign to the dairy shall ever find a resting place?"
Because a low temperature is as necessary to preserve milk and aid in extracting the cream from it as a high temperature is necessary to boil water.

Unfortunately, a great deal of dairy butter is produced under conditions where no particular attention is paid to temperature, but the result benefits nobody, as it is bought, sold and eaten under protest, and then only by those who are looking for "cheap butter."

A temperature in the dairy room above 60° to 65° is antagonistic to good milk, cream or butter quality.

Somehow, after taking measures to keep their dairy room cool during the summer, spoil their good work by utilizing it also as a cold storage for cookery.

The result is that their butter, through absorption of foreign odors by milk and cream, never has that fine natural aroma and flavor so prized by all lovers of a first-class article.

The value of ice to good dairy work never becomes more apparent than when summer begins to warm up the land. By the judicious employment of ice, temperature about milk, cream and butter can be absolutely controlled, and with a good supply on hand, you can look into the future and confidently guarantee your summer butter quality.

Above all things remember that low temperature is to butter quality in summer what a rudder is to a ship. Thus, you see that it is very profitable to maintain a cool dairy room.

Most certainly you would. I know of no greater extravagance for a domestic butter maker to indulge in than to retain in coming season a rusty milk pail, an old worn churn, or a broken butter worker. Buy utensils that are necessary and up to date, but do not indulge in fancy articles. The dairy utensils one uses have a great influence on the quality of the stock turned out, and quality either good or bad decides the market value of the butter.

GEORGE E. NEWELL.

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A race between two or more horses is not necessarily wrong, and there are tracks which are devoted to that purpose, and they are usually well patronized, but a horse race is not farming, nor is a bicycle race, a baseball or a football match, a balloon ascension or a brass-band tournament, and many of the other attractions which have been added to our fairs until they have seemed more like second-class circuses than an agricultural exhibition. They have been given the most prominent notice in the advertisements; they have filled the programme for each day, and have received the largest share, usually, of the money spent in holding the meeting, and naturally they have attracted so much attention that the farming part of the exhibition has been placed quite in the background. Many scarcely saw it at all, and others could devote but little attention to it, fearful that by so doing they should miss seeing some other thing which had been announced as an attraction of unparalleled excellence.

We hope, then, that if these societies find new fair grounds farther away from the cities and towns, and among the denser of the rural districts, that they will feel the courage to return a little nearer to the plan of the old-fashioned cattle shows of our boyhood, and expend their money to bring together good farm stock, good fruits and good produce, instead of appropriating it for fast horses and shrewd jockeys, and causing the farmer to understand that if he brought his best to exhibit he might make it away again without any recompense, but the feeling that he had been tolerated there because of the name of the society and the bounty obtained by it for its name, but that his presence had scarcely been noticed by any one connected with it excepting the ticket taker at the gate.

Sheep Eating Weeds.

The American Sheep Breeder points out the fact that many plants usually classed as weeds are in pastures often eaten by sheep, either by the variety to their diet or for the tonic effect on their systems. It mentions the common dandelion, parley, yarrow, and even thoroughwort, as desirable for this use. In England sheep growers purposely sow yarrow when laying down pastures for sheep, and also the narrow-leaved plantain. Most of these are somewhat bitter to the taste, and the liking for what is bitter seems to be a peculiarity of the sheep, which often leads it to eat leaves that are poisonous rather than medicinal. It is possible that all these plants have medicinal qualities, but the sheep does not know enough to doctor itself with them, as sheep are often poisoned by eating leaves of laurel when allowed to run where that poisonous plant grows. Sheep are also poisoned when an overdose of cherry leaves was probably the cause. The leaves of the cherry, peach, almond and of the common elder all contain prussic acid, and are all poisonous when eaten in any quantity.

It is chiefly we think when pastures are dried up, and the sheep's appetites are clamorous for some green thing, that these fresh leaves are most attractive to them. Yet we should have to test a great many leaves of the cherry, almond or peach where sheep could eat all they liked of them. The craving for something bitter probably explains why sheep will eat the tender shoots of nearly all deciduous trees, which are almost invariably bitter to the palate. With regard to anything uncleanly about sheep, it is regarding animal excrement or blood, the taste of the sheep is more refined and sensitive than that of any other farm animal. But it unquestionably does have a liking for what is bitter to the taste, and will eat the small, wormy apples that a hog will turn up his nose at, while the hog will pick its favorite food among filth that no sheep could be brought near enough to touch. In the early summer, while the small, bitter, wormy apples are falling, the sheep is, therefore, a much better scavenger in the orchard than is the hog.

Fish in Boston Market.

Prices of fish seem to keep growing lower as the weather continues favorable, and many of them have reached the point where they are scarcely likely to drop much farther. Good market cod go in jobbing lots at 24 to three cents a pound, and steak cod at three to four cents. Haddock, hake, pollock and onk are slow at 24 cents, and flounders in good supply at three cents. Mackerel very scarce yet and firm at 25 cents each, native or Spanish. Halibut goes down again to 9 or 10 cents a pound for Western and 10 to 11 cents for Eastern. Bluefish have come in abundance, and are in fair demand at 7 to 8 cents. Pompano is steady at 25 cents with mackerel and sheepshead at 15 cents and sea trout at 18 cents. Bull heads and lake trout quiet at 10 to 12 cents. Striped bass in good supply at 12 to 15 cents for large and 17 to 19 cents for small. Very few pickerel here, 7 to 10 cents a pound. No change in brook trout, wild at 60 cents and cultivated at 50 cents a pound.

Shad steady at last week's rates, 20 cents for bucks and 25 cents for roes shad, with roes at 30 cents each. Frozen herring \$1.25 to \$1.50 a hundred. Salmon at \$1 to \$1.10 a pound for Penobscot, 15 to 20 cents for frozen Eastern and 10 to 12 cents for Oregon. Frogs legs steady at 40 cents a dozen, and soft-shelled crabs still \$7. Fresh tongues features which are harmless enough in their way, but which have been introduced and tolerated in the desire to attract the idle crowd and to swell the gate receipts, though they had nothing in common with the professed purpose of the fair, or that for which the society was organized and for which it received annually the bounty of the State.

AGRICULTURAL.

Farming at the Experiment Stations.

Manual Requirements of Crops.
The Hatch Experiment Station sends out bulletin No. 58, with the above title, written by Prof. William B. Brooks, in which he gives some of the considerations at which he has arrived as a result of the many experiments made at the station since 1889, in testing the different fertilizing elements in various materials of known strength, and under varying conditions, each experiment being upon one-twentieth of an acre, the fertilizers applied broadcast and harrowed in just before planting corn crops, or as a spring top dressing on grass lands. Those who are desirous of full information should send for this and preceding bulletins on the same subject, but we will give a resume of it.

The conditions affecting the experiments are the great difference in composition and mechanical condition of soils, and the fact that most of our soils have been long in cultivation and will not produce profitable crops unless enriched. Our supply of home-made manures is in most cases not sufficient to do this, and farmers buy and use fertilizers in large quantities often with only a vague idea of what they need. Special or complete fertilizers sold for various crops show astonishing variations when made by different parties for the same crop, while some recommend the same mixtures for very different crops, yet nearly all contain twice as much phosphoric acid as potash and some four times as much.

Our farmers, as a rule, sell no grain to carry away phosphates, but usually stock crops as require more potash than phosphoric acid, as hay, straw, vegetables and fruits, while many of them are milk producers, buying and feeding large amounts of wheat bran, cottonseed meal, gluten meal, oats, etc., all of which tend to give them manure rich in phosphates and nitrogen.

Analysis of plants and agricultural products show most of them to contain more potash than phosphoric acid, while as above stated, the reverse is the rule with most commercial fertilizers. Plants vary much in feeding capacity, or their ability to find and take from the soil what they need, some not getting it unless in the soil in much larger amounts than they can take, and this has been generally considered in compounding fertilizers or selecting them for the crops.

Upon corn in some 30 experiments they found that potash in the form of muriate largely increased the growth of both corn and sugar, and had much more influence upon the crops than either nitrogen or potash. This was the result in nearly every case when tried in other parts of the State. The special corn fertilizers do not have potash enough, and he would advise a fertilizer containing three parts nitrogen, four parts phosphoric acid and 11 parts potash.

On oats after corn nitrogen in the form of nitrate of soda increased the crop more than did phosphoric acid or potash, and this was the case in other parts of the State. For oats use a fertilizer with five parts nitrogen, three parts phosphoric acid and five parts potash.

On grass and clover the nitrate of soda had but small effect on first crop of grass each year, while potash showed its results in the second crop. He advises for growing timothy eight parts of nitrogen, three parts phosphoric acid and three parts potash. Where clover is wanted use two parts nitrogen, five parts phosphoric acid and 10 parts potash.

It is said to require all the three elements, but again was larger, plumper and of better color where potash was used, and it does not seem to have ability to take up potash enough unless it is present in large quantities.

Cabbage, white mustard and Swedish turnips are all of the same family of plants, and responded quickly to a liberal application of phosphate, but the use of potash was also beneficial to the cabbages and turnips. Soy beans required fertilizer rich in potash, resembling corn and clover in this respect, but were not much increased by either nitrogen or phosphoric acid.

These wide differences should induce farmers to experiment for themselves to learn what they need upon their own soils for their various crops, and they are advised to purchase fertilizer materials and mix their own fertilizer, because they can plant food at lower cost, and because the mixed fertilizers in the market, whether special compounds or not, are seldom adapted to furnish what is most needed by the plant.

For corn, on soil land in good condition, he advises to the acre 100 pounds of nitrate of soda, 200 pounds dried fish, 250 pounds acid phosphate and 220 pounds muriate of high-grade sulphate of potash, which would furnish about 30 pounds of nitrogen, 40 pounds phosphoric acid and 110 pounds potash. On land rather poor in organic matter, use 200 pounds nitrate of soda, 200 pounds dried fish, 100 pounds of tankage, 200 pounds acid phosphate and 250 pounds muriate of high-grade sulphate of potash. This would give 42 pounds nitrogen, 50 pounds phosphoric acid and 125 pounds potash to the acre. In connection with farm manure would use for corn 50 pounds nitrate of soda, 100 pounds each of dry ground fish, acid phosphate and potash salts, giving to the acre 14 pounds nitrogen, 21 pounds phosphoric acid and 50 pounds potash.

For an acre of oats on land in good condition use 125 pounds nitrate of soda, 100 pounds acid phosphate and 50 pounds potash salts, giving to the acre 14 pounds nitrogen, 21 pounds phosphoric acid and 50 pounds potash. On land rather poor in organic matter, use 200 pounds nitrate of soda, 200 pounds dried fish, 100 pounds of tankage, 200 pounds acid phosphate and 250 pounds muriate of high-grade sulphate of potash. This would give 42 pounds nitrogen, 50 pounds phosphoric acid and 125 pounds potash to the acre. In connection with farm manure would use for corn 50 pounds nitrate of soda, 100 pounds each of dry ground fish, acid phosphate and potash salts, giving to the acre 14 pounds nitrogen, 21 pounds phosphoric acid and 50 pounds potash.

For timothy or mixed grasses put on 150 pounds nitrate of soda, 135 pounds tankage, 50 pounds acid phosphate and 25 pounds muriate or sulphate of potash, to give 32 pounds nitrogen, 15 pounds phosphoric acid and 13 pounds potash. For mowing land with considerable clover use 100 pounds nitrate of soda, 300 pounds acid phosphate, and 160 pounds potash salts, giving 16 pounds nitrogen, 40 pounds phosphoric acid and 80 pounds potash.

For rye, 125 pounds nitrate of soda, 150 pounds acid phosphate, 125 pounds potash salts, containing 19 pounds nitrogen, 20 pounds phosphoric acid and 65 pounds potash.

For cabbages and Swedish turnips, 150 pounds nitrate of soda, 200 pounds dried fish, 400 pounds dry ground fish, 300 pounds bone meal, 500 pounds acid phosphate, 250 pounds high grade sulphate of potash, to give 70 pounds nitrogen, 141 pounds of phosphoric acid and 125 pounds potash.

83 pounds phosphoric acid and 100 pounds of potash. There are indications in some experiments that the high-grade sulphate is better than the muriate of potash for clover. It cost about 40 cents per hundred pounds more. In other places where we have said potash salts either may be used, but not lower grades of potash salts. Lime may be needed on some soils after muriate of potash has been used for several years in succession.

It is best to mix these materials just before using, and put on broadcast after plowing, and harrow them in. Where more than 150 pounds of nitrate of soda is used to the acre, it will be well to keep back one-half of it until the crop is three or four inches high, and then scatter it evenly near the plants. It need not be covered, though if no rain comes soon it would work more promptly if harrowed in.

The amounts advised are in most cases moderate, and many times it might be profitable to add half as much more to the prescribed amount.

Trade in Pork Products.

Very few people not directly interested have noticed the large and rapid growth in amount of the hog products of this country, and it is not long since we heard an intelligent man saying that the restrictions placed by Germany upon their sale in that country was likely to ruin the pork raisers and pork packers of this country. A few figures from the Cincinnati Price Current in regard to Western packing houses only will show that they are still able to do business.

For the year ending March 1, 1899, there were more than 23,500,000 hogs packed in the West. For the year ending March 1, 1893, less than 6,000,000 were packed. The number of hogs packed increased 300 per cent., but as the size of the hogs increased, the meat increased only 231 per cent., and the lard 260 per cent. The price per pound paid for meat is not quite as high now, but the packers paid to the farmers about \$140,000,000 more last year than in the year ending March 1, 1893.

At that time 10 times as many hogs were packed in winter as in summer, 10 years ago the summer and winter pack were about equal, and last year the summer pack was more than 4,000,000 hogs larger than the winter pack.

For three years ending March 1, 1893, the average cost to packers was 717 cents per pound for green meats and lard. For the three years ending the first of last March it was a little less than five cents a pound. For the three years ending in 1893, the average weight of hogs was 189 pounds, and for the last three years it averages 169 pounds.

But the export, which includes the product of packing establishments in the Eastern States as well as Western, shows a nearly equal growth. For the three years ending June 30, 1893, the average exports of pork, lard, bacon and hams were \$93,262,311 pounds a year. As the accounts are not made up to end of fiscal year, we will compare that with the three years ending Jan. 1, 1899. The average for those three years was 1,452,321,948 pounds a year. In the three years ending Jan. 1, 1899, we exported 531,024,568 pounds a year of bacon and hams, and a little more than 300,000,000 pounds of lard a year. In the past three years we averaged annual exports of 727,835,915 pounds of bacon and hams and 693,708,375 pounds of lard.

In the year 1898 we exported 43 per cent. more bacon, 40 per cent. more hams, 133 per cent. more pork and 40 per cent. more lard than we did in 1893. The American hog seems well able to hold his own in a commercial way at least.

The Average Dairy Herd.

It is unmistakable true now that the owner of a small herd of good dairy cows kept well in hand has a better chance of making a profit than one who tries to manage a large, unwieldy number, none of which seem to come quite up to the standard. The tendency is to return to smaller herds, and bring them up to a paying point. This is not always an easy lesson to learn, for we always like to count on numbers. But it is better to reduce the numbers to the point where proper attention can be bestowed upon each individual. Anything above this is a waste of time and labor, and a misuse of invested capital.

he average farmer should keep from 10

"He Who Pursues Two Hares Catches Neither."

Said a well known young man about town, "I tried for years to burn the candle at both ends, in the pursuit of pleasure while trying to attend to business. My blood, stomach and kidneys got into a wretched state and it seemed that I could not carry the burden any longer, and would almost welcome a suicide's grave."

"But now my rheumatism has gone, my courage has returned, and all on account of that marvelous Hood's Sarsaparilla, which has made me a picture of health. Now, I'm in for business pure and simple."

Blood Poisoning.—"When I enlisted in Montana for the Cuban war I began taking Hood's Sarsaparilla and got several comrades to do so. It seemed to make us better to get rid of heat and fatigue at Key West and Tampa, while others gave out, also in Cuba. I was wounded at San Juan with a brass jacket bullet, but got no treatment until I arrived at Fort McPherson, Ga. The surgeon said if it had not been for my good rich blood that the brass shell would have poisoned me sure and I would have lost my life." George P. Cooper, Co. 9, 25th U. S. Inf., Washington Barracks, D. C.

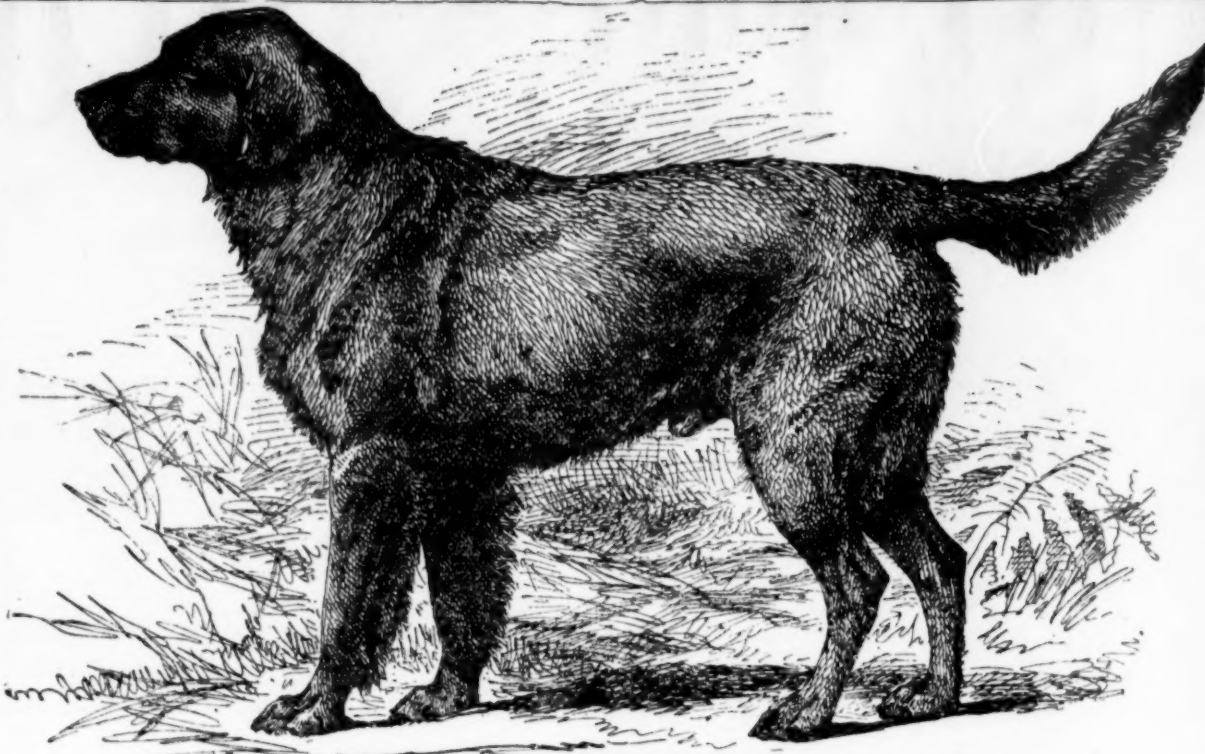
Grip.—"Through the blessing of Hood's Sarsaparilla and Hood's Pills cured me of grip and the after weakness. My heart and nerves were badly affected, but am now strong and hearty, doing all my household work. I have been a walking advertisement for Hood's among my neighbors." Mrs. MARY M. MESSENGER, Freehold, Pa.

Leg Sores.—"Sores on my wife's limb were so bad she could not walk. Physicians said of no value and she used crutches. After taking Hood's Sarsaparilla, she laid them aside and walked freely." FRED A. HOYLE, Reynolds Bridge, Conn.

Salt Rheum.—"My mother was seriously afflicted with salt rheum and painful running sores. No medicine helped her until Hood's Sarsaparilla was used, which cured her entirely well." ESSE E. McLESTER, 328 Dearborn Street, Chicago, Ill.

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A FAMILIAR FARM DOG—MONGREL.

10 cows on every 160 acres; but a farmer who devotes all of his attention to dairying, and is strictly a dairy farmer, should average about one cow to every three acres. If one has the necessary business to conduct his farm economically, this portion of cows to the acre will be about right. It is possible to make as much profit from butter selling today at 25 cents a pound as it was when it sold for 35 and 40 cents. The reason for this is that we observe different methods today, and get more both from the cows and the milk. How to do this, however, is a problem that each one must face and solve.

The farm separator is essential for future success in dairying. The separator has passed beyond the experimental stage, and it has come to stay. With a good farm separator in use, 10 good average cows—not scrub—should produce \$450 in butter money, taking prices as they stand today. This would pay, whether the cows were kept on an ordinary farm or dairy farm.

On poor land the number of cows must be reduced. Never attempt to raise more than the land will actually support. It is better to begin on a small scale and work up. Thus a farmer friend of the writer's took a farm of 160 acres, and started in dairying with a dozen cows—all the land would support at the time—and by judicious methods he worked his herd up to 40. That is the number of cows he can feed off his former poor farm. He not only kept in view the question of maintaining the standard of his herd, but he had to improve his soil year by year. Such a thing is possible, and when it is accomplished it deserves mentioning. There are plenty who fail to hold their own in this respect, and let both cows and land degenerate year after year. The products of the dairy should never be used at the expense of the land. Sooner or later the accounting time must come.

W. E. FARMER.

Live Stock Notes.

The advocates of the Merino sheep are now claiming that if they do not make as good money as other breeds they are most valuable, as they give more milk than those which are called mutton breeds. We should class that as war news is sometimes classed, "important if true." We have no proof of this excepting the report as we never tried to see how much milk either would give. We know from experience that the Scotchdown ewe gives milk enough to raise a good lamb and have it suitable to kill at an early age, and there are many who would claim that the Shropshire or Oxford are fully equal in that respect. If we had Merino ewes we would not hesitate to tell them to breed a cross with either of the mutton breeds, but we should scarcely care to introduce the Merino cross without any other intent than to get better milking mothers among the mutton breeds, unless we found we had a strain that had lost much of their capacity for milk production.

A Wyoming paper says that a cattle company in that State are feeding about 400 calves on a ranch there this season. "About half that number have bells on for the purpose of rearing away coyotes. Through experience this is shown to be a cheap and effective way of protecting herds from the ravages of these destructive animals." We have often advised the use of bells on sheep where danger was apprehended from dogs. They will not chase a flock of sheep long after the bells begin to ring, for a sheep-stealing dog is as cowardly as a coyote.

It is much upon the same principle of a man we once heard of who was having a new burglar alarm put on his house. He wanted it where the burglars would be liable to hear it, as he would prefer frightening them away to getting up and fighting them.

The Western Ploughman says: "Never use buckwheat straw or oat straw for pigsties. Buckwheat straw will soon make them jump and kick and jerk. Oat straw will give them a skin disease which will in a short time stop their growth."

This should be generally known if true, as our Eastern farmers have oat straw about as frequently as they straw, and buckwheat as often as wheat. Buckwheat straw, being of little value for feeding purposes, is most generally taken for bedding. We have used it to bed the floor of the hen-house, and used it without stopping to thresh it, and it made the hens jump and kick and scratch as long as any grain was laid among it, and oat straw not threshed had a similar effect.

The captain of an Australian coasting steamer has found a new use for wine. He was wrecked on a reef, and there were no rockets to send life lines to the shore, or from shore to vessel, but he had a number of pigs in the cargo, and he fastened a life line to them and put them overboard. They immediately swam to the shore, and communication was thus established by which every one on board was taken ashore by means of traveling oars on the line.

The Chicago Tribune says that the serum or inoculation treatment for hog cholera, which is recommended by the Department of Agriculture, has been so thoroughly tested that its efficacy has been proved. This year the tests made in an Iowa County showed that out of 922 animals treated 170 died, or less than 20 per cent., while out of 1107 hogs in other droves which were not treated 879 died, or nearly

80 per cent." This saving is of great importance to farmers in the pork-producing States. The loss by this disease in Iowa alone two years ago was estimated at \$15,000,000. Not only is this a great amount to save, but when wheat and corn are very low in price the farmer will feel that he may convert them into pork without losing his profits, and more than that by cholera among the swine. If this treatment continues to work as well in the future, it will give an increased impetus to pork production when the prices on grain are not satisfactory.

A writer in the London Spectator takes the ground that the common cold is contagious or infectious in any of its stages, not only among men but animals, and also communicated from the animals to the human race. He alludes to the fact that Arctic explorers have never suffered from colds in the head until they returned to civilization, and to that island in the Hebrides where the natives never have colds or coughs excepting when a ship from the mainland touches the island, when all are at once attacked by the disease. It is called the "stranger's cold," and soon disappears after they leave.

But to our domestic animals. He claims that cats are especially susceptible, and recalls an old saying frequently used in some sections. "The cat is sneezing, we shall all have colds." Sheep also have colds, and the eruption around the lips (herpes labialis), commonly called "cold sores," may often be seen upon them. On Australian sheep ranches the shepherds are usually attacked as soon as shearing begins, and it seems to be taken from the sheep. It is of a star-shaped nature, and sometimes very serious and liable to result in pneumonia.

Horses also are subject to a nasal catarrh, and if a horse goes into a fresh stable, particularly if he is fresh from grass, he usually has it, and any other horses in the stable are liable or very apt to be affected soon after. A friend of his had two horses and was in the habit of turning one out at pasture in summer. On being brought back he always developed a severe cold. Last year he had his stable thoroughly disinfected and white-washed, and he had no other horse in it when he brought in the one from pasture, and he remained entirely free from colds and catarrh.

Thirteen points out not only the way by which the catarrh microbes sometimes reach to the human race from the animals, but gives a hint as to the necessity of ventilation, and disinfection as preventives, and guarding the animals against it as one of the first steps in protecting ourselves. In these days when grippe and pneumonia have been so prevalent, and have in so many cases seemed to be the result of a slight cold in the head, "caught" in some almost unaccountable manner, we feel inclined to protect not only our horses, cattle and sheep, but the cat and dog at the house from danger of contracting and bringing home these troublesome and dangerous microbes.

The Various Dairy Feeds.

The first bulletin issued by the Maine State Board of Agriculture this year contains the lectures delivered at the Dairy Conference at Portland last December. They all contain much valuable information, but we propose now to use some of that which we find in the essay by Prof. Joseph L. Hills, director of the Vermont Experiment Station, upon economical dairy feeds.

Commenting with saying that the body of an animal is made up of water, ash or bone matter, protein or lean meat and fat, he says that as the two first are found in all food, the necessity exists of seeing that the food also contains proper proportions of the other two elements, of which the protein is most important, as it includes all those materials containing nitrogen, which go to make up the muscular tissues of the body.

The starch, sugar, gum, etc., and the true fats, while classed separately by chemists, are all kinds as the carbohydrates. The protein in the food forms the muscles, tendons, cartilage, and the albumen and casein of milk. It also makes body fat, and perhaps a part of the milk fat; it produces heat to maintain bodily warmth, and material for the production of muscular energy. It also, by its nitrogen, acts as a stimulant of milk production.

The carbohydrates perform these same duties, except the making of muscle or lean meat, to even greater extent than does the protein. They are found in all food, and are the most abundant of all the elements of food. They are found in all food, and are the most abundant of all the elements of food. They are found in all food, and are the most abundant of all the elements of food.

But all these feeds are deficient in protein contents, and need concentrated feeds with them. Of these, cottonseed meal contains the most protein, and is cheapest at present prices, but animals vary in their ability to digest it, and some cannot take two pounds a day without getting off their feed. Use it sparingly and carefully until the limit is found, and use none that has been overheated, moldy or musty. Accept only that which is of a bright-lemon color, and a fresh, clean, nutty taste.

Lined meals rack next in amount of protein, and may be fed safely in almost any quantity, but they have a tendency to make butter soft, while the cotton-seed meal hardens it.

Gluten meal and gluten feeds are by products from the factories where glucose is made from corn, and are economical feeds. Lately they are more even in analysis than at first, but need care in feeding, the same as advised for cottonseed meal. Like that they may cause digestive troubles, gas and fever if they are used too freely.

Dried brewers grain, malt sprouts and a distillery waste wrongly called Atlas gluten meal, are less rich than those named above, and some cows will not eat them, or only sparingly, but they are sold so cheaply that they are economical feeds and apt to be safer than cottonseed or gluten meals.

Wheat bran and wheat middlings are reasonably milk makers in the feed, absolutely safe in any possible quantities, and at usual prices they are desirable dairy feeds.

He classes corn meal as economical when properly used, but thinks it is too much used. Statistics show that nearly \$3,500,000 are spent each year in Vermont for feeding stuffs, and of this amount \$1,250,000 is for Western corn, which is too much. As a rule corn can be grown more cheaply than any other feed, and it might be better used in the silo than dried and ground.

Over \$500,000 is spent in Vermont yearly for oats, and they are an excellent dairy feed and well adapted for milk making, but at present prices are not a cheap food. The so-called "cat feeds" are simply an excuse for animal manufacturers to work off their oat hulls, light oats, etc., with more or less corn or gluten meal in them, and are not cheap at the prices asked. "This is the case with nearly all the mixed feeds or proven feeders." Oat hulls have hardly more feeding value than ground toothpicks," he said.

He condemned all condimental foods and patent medicines for the dairy cow, and classed them as humbugs, seldom, if ever, bettering the condition of healthy animals.

Among other things to be considered are the effect of these foods upon the health of the animal, and upon the quality of the dairy product, which we have given in speaking of the foods, and also upon the quality of the manure. Rich food makes rich manure and poor feed poor manure. Cottonseed, linseed, bran, gluten and distillery feeds have decided value in this respect, while cornmeal, oats and most mixed feeds rank low. Of forage, red clover hay adds most to the value of the manure heap, with early cut hay next, late-cut hay nearly as good, with silage and roots of small value.

It pays to feed good feed to good cows, and if it is given to poor cows its value is not wasted, but it does not carry as much sides with the advocates of any particular breed.

The laws in some States regarding an inspection of feeding stuffs sold, and requiring a guaranteed analysis of their food contents have worked to the advantage of the dairyman, and they should be enacted and enforced in all the States. They are equally as important as similar laws in regard to the making and sale of fertilizers.

The exports from the port of Boston for the week ending April 15, 1899, included 12,316 pounds butter, 109,478 pounds cheese and 171,225 pounds oats. For the same week last year the exports included 2640 pounds butter and 98,988 pounds cheese.

Slilage from mature corn, that is, corn cut when the kernels begin to glaze, is shown by the same table to contain nearly twice as much protein and more than twice the carbohydrates that were found when the corn was cut about at the tasseling stage. Oats and peas sown at the rate of two bushels of peas harvested in fairly deep, and a bushel of oats put on later, to the acre, and harrowed lightly or bushed in, has proved at the Vermont station to grow one of the best foods as a supplement to the pasture, as cattle like it and it keeps up the milk flow. They put it in at intervals of 10 days, and cut when oats are beginning to head, but have not begun to turn yellow. By analysis, it has a little less carbohydrate than the silage, with more than twice as much protein, and gives good results either fed green, cured as hay or made into silage.

Clover hay is one of the best things for balancing the rations, renovating the soil and helping out the pocketbook. It is best if cut in its early bloom, and is as good in hay properly cured as it is in the silo. Where it will not grow well, the trouble is usually a lack of lime or potash in the soil or too much acid in it.

He considered roots of all kinds as not being economical food, because of their containing so much water, from 91 to 87 parts water in a hundred pounds. Their chief value is as appetizers for those who have no silage. Those who have or will build silos will find the corn crops more valuable than roots.

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TRADE-MARK.

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THE HORSE.

A Champion Prize Winner.

Only a few years ago the idea prevailed quite generally that a fast race-winning trotter must be a long-legged, slab-sided creature, utterly worthless as a roadster or general-purpose animal, and of no earthly use except to pull a "rig" from three to five fast miles in an afternoon, with intervals of rest between the trials. Even now there are those who believe that it is impossible to find any animal which combines extreme speed at the trot with all the qualities which the ideal road horse must have.

Horses which possess all these qualities are not plenty, yet there are such, and Bingen, whose likeness appears above, is one of them. His color is a very dark mahogany bay, bordering on a brown. He stands 15.25 hands high, and weighs not far from 1075 pounds. He is so well proportioned, so compactly made and so highly finished that at first glance most horsemen would be likely to estimate his height and weight considerably less than they actually are. The likeness is reproduced from a photograph taken by a member of the BREEDER staff. It gives a very good idea of the conformation of Bingen, but does not flatter him in the least. He is one of the smoothest-turmed, most evenly muscled and cleanest-limbed horses that the writer has ever examined.

Bingen has a clean-cut head, quite fine at the muzzle from a front view, but of a good width between the eyes, then tapering gradually to the ears. It has ample room for brains. His countenance, when he is at rest, indicates a pleasant, even temper and contented disposition under all ordinary conditions. Yet there is an unmistakable expression of great courage in his eye, which one familiar with equine physiognomy can but observe. His neck is only of medium length, but it is clean at the throat, with the windpipe well detached, and is very strong at the base, where it unites with the shoulders. It is just such a neck as is always found on a stallion of wonderful vigor and unusual power. He rises well at the withers, and his shoulders, which are of the oblique or well-slanting pattern, are heavily clothed with muscle.

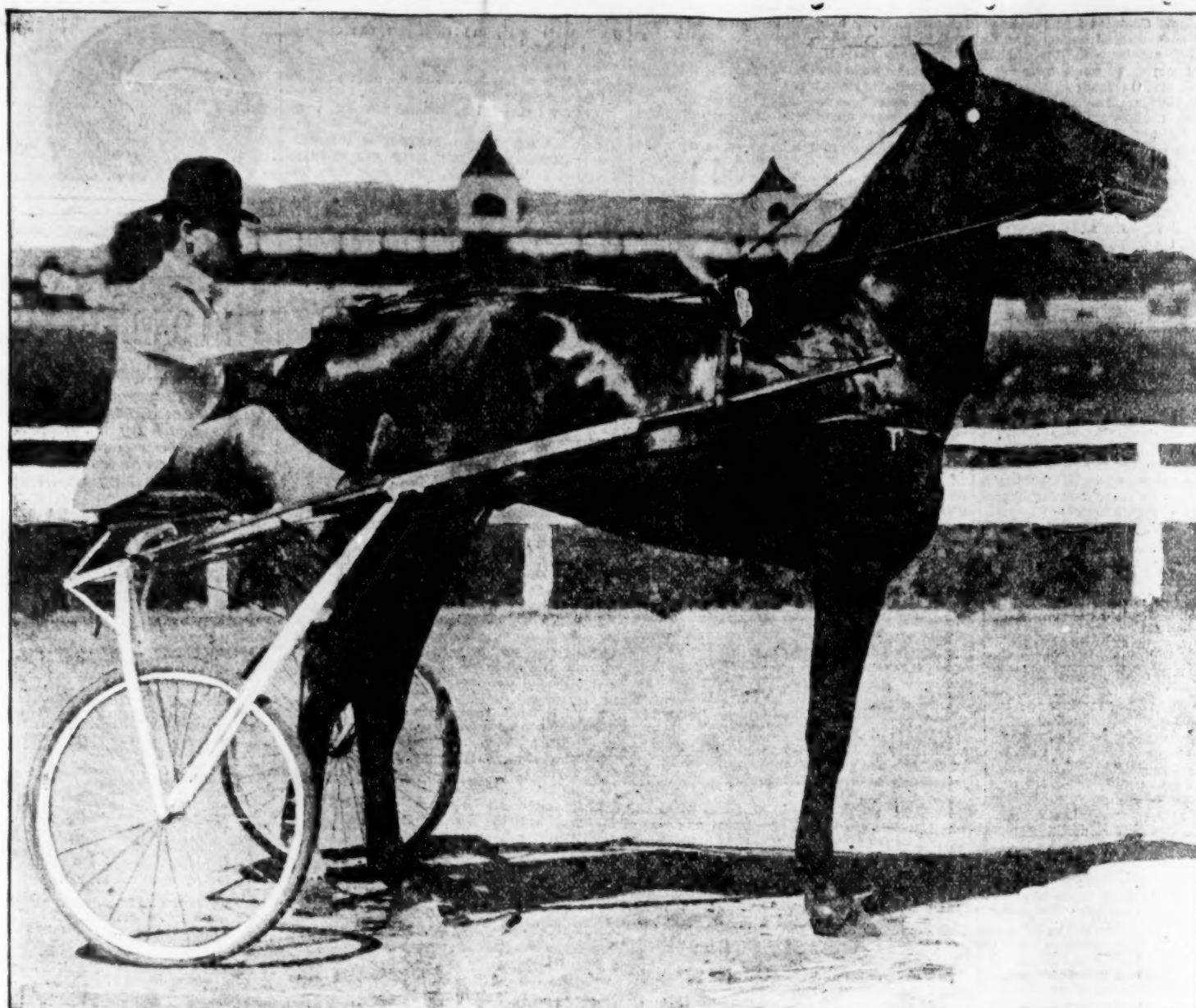
His barrel is of medium length and well ribbed up. His back is short and strong, his loin heavily muscled and very strongly and smoothly coupled to long roundly turned and slightly drooping hips. His crop is beautifully rounded and his tail is well set. His quarters and gaskins are abundantly supplied with muscle, which with his strong back and loin gives him immense propelling power. His barrel is deep, both through the heart and flanks. He has firmly knit, sound joints, strong, clean limbs and good feet. He has plenty of bone and substance and the bone is of excellent quality. His ruses are of very fine grain, dry and hard, as much so as those of any horse we have ever seen. His general appearance indicates a horse of great muscular power and remarkable endurance. Any expert horseman would be impressed with this at first glance, even if he did not know the horse. He is a model of power, strong at every point, with not a perceptible weak spot in his entire make-up.

Bingen was bred by A. Smith McCann, Lexington, Ky., and foaled the property of Dr. Bennett of that place in 1893. His sire is May King (trotting record 2:30), and now owned by Mr. Charles Whittemore of this city, proprietor of Lookout Farm, Natick, Mass. May King was by the renowned Electioneer. His dam was the famous trotting mare May Queen (record 2:30). May Queen was also known as Nashville Girl. Her sire was Alexander's Norman, and her dam, Jennie, was by Crockett's Arabian. The latter was by the imported Arabian stallion Mokhladi, and out Kate Crockett (dam of Lulu, 2:15), by imported Hooten; next dam, Mary Blaine, by Texas, a thoroughbred son of Lane, and he by American Eclipse.

The dam of Bingen is Young Miss, and her sire is Young Jim, a very handsome blood-like son of George Wilkes. Young Jim has the distinction of being one of the four stallions that have taken records in 2:10 or better. Only four stallions have ever sired this number of 2:10 trotters. Bingen's second dam was Miss Mambrino, and she was by Red Wilkes, the most successful son of George Wilkes as a sire of 2:30 record speed, and the greatest brood-mare sire of his age in the world. The third dam of Bingen was Miss Clark. Her sire was Alric, and he was by the successful sire of speed, Almont, a son of Alexander's Abdallah.

The dam of Alric was Queen Lizzie, by Mambrino Chief; second dam by Crusader, son of Blackburn's Whip, and third dam by Hancock's Hamiltonian, a thoroughbred son of Hamiltonian, by imported Diomed. The fourth dam of Bingen was Kate, by the distinguished brood mare sire Clark Chief, which got the dams of Martha Wilkes (2:08), Phyllis (2:13), etc. Bingen's fifth dam was Lida, a registered thoroughbred daughter of Vandal, by imported Glencoe; his sixth dam by imported Envoy; seventh dam by Bertrand, son of Sir Archy; eighth dam by imported Karakooka; ninth dam by imported Diomed; tenth dam, imported Old Hope, by Volunteer; eleventh dam by Herod, the most famous sire of racers in England in his day, and twelfth dam by such a son of Snip, by the world-renowned Flying Childers.

This is a strong pedigree. It is strong both in trotting and thoroughbred lines, and these lines come through individuals of



THE TROTTER BRED PACER ANACONDA, RACE RECORD 2:04 1-2.

demonstrated merit. In his yearling form Bingen trotted a quarter in 35 seconds. Mr. George W. Leavitt of this city saw the colt that fall while in Kentucky, and considered him the best young prospect that was shown him in that State. Mr. Leavitt bought the colt for \$2500, and Mr. E. H. Greely of Ellsworth, Me., became an equal partner in the deal. The colt was brought North that winter, and taken to Maine by Mr. Greely, who met him at Boston. Mr. Greely jogged him on the road until the track was in shape, after which he gave him some track work. In the meantime, a few mares were mated with him, several of which produced foals. On the Fourth of July Mr. Greely drove Bingen, then a two-year-old, an exhibition mile in 2:30 on the Ellsworth (Me.) track.

Some time after the trial named above Mr. Greely brought the colt by boat to Boston. As there was no express team at the wharf which he could get to help take the colt and his equipments to Mystic Park, he hired a herd, threw the trappings into it, got in, and led the colt behind through the city to Henry Titer's stable at Mystic. Bingen was as indifferent to the strange sights and sounds of the city as though he had always encountered them

from the day he was foaled. He is evidently one of the most contented horses under all circumstances that ever lived. Shipping him by rail or boat does not worry or disturb him in the least. He will take his rations as contentedly when on board a train going at the rate of 30 or more miles an hour, as when at home in his own stall.

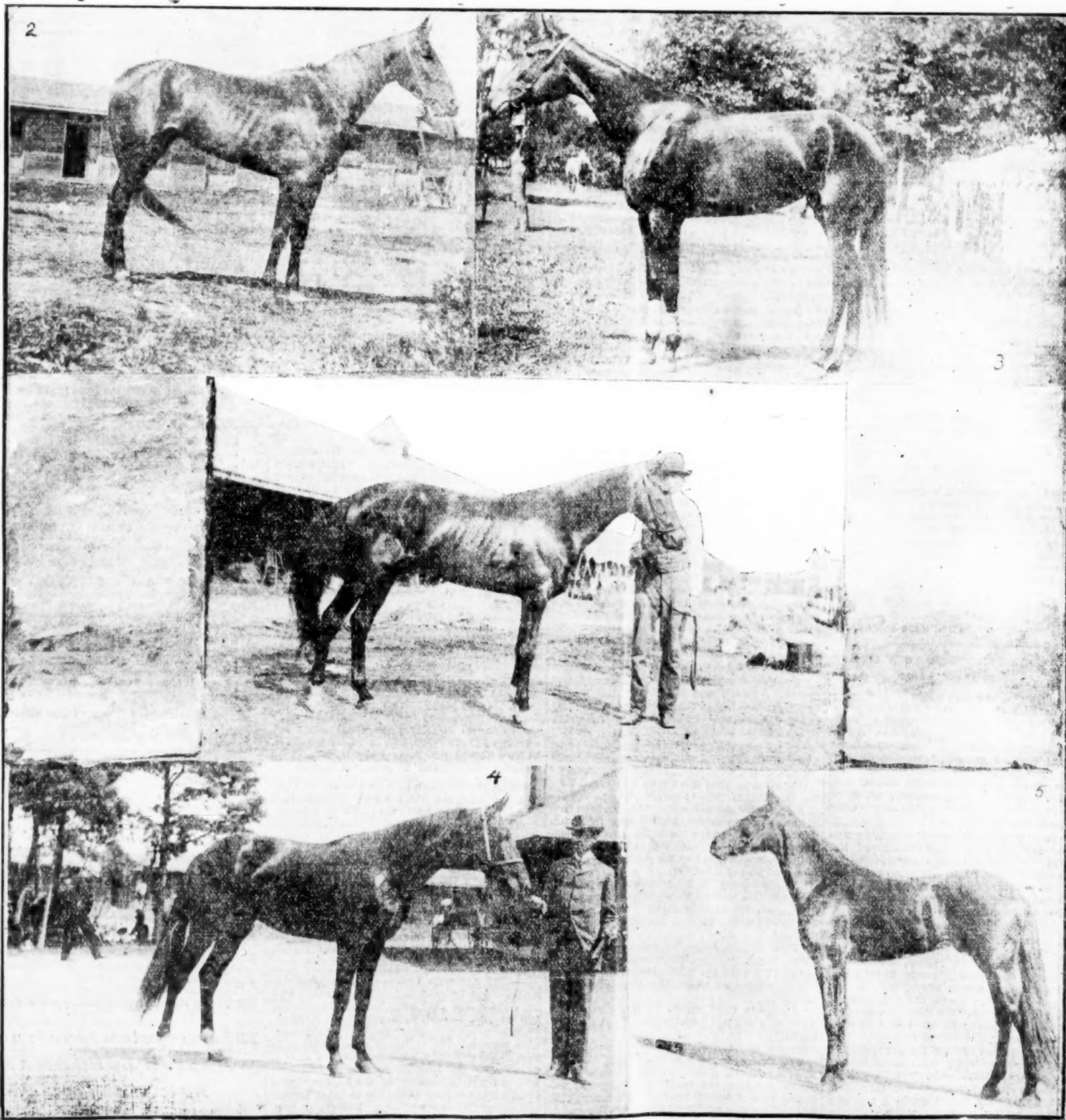
Since his regular track work was begun Bingen has been trained by Henry Titer, now, and for several seasons past, head trainer at Forbes Farm, Ponkapog. Bingen was started in five races as a two-year-old. He had speed enough to win all of them hands down, but was unsteady as a time, which handicapped him. His first start was at Fleetwood Park, Aug. 27, 1895. He was distanced in the first heat, but not for lack of speed or staying qualities. The following week he won a race at Lewiston, Me., taking a record of 2:24, and showed ability to beat 2:20. This race was on Sept. 2. He started at Providence, R. I., Sept. 16, forced the winner out in 2:19 in the first heat, won the second in 2:24, and was a close second in the third heat, the time of which was 2:19. He won the two-year-old stake at Mystic Park, Sept. 25, trotting the second heat in 2:24, pulled to a walk at the finish. He was

bought that day by his present owner, J. Malcolm Forbes, for \$8000. The following week, Oct. 1, he won a race at Rigby Park in 2:24. 2:19. During that meeting he trotted an exhibition mile on Rigby track in 2:12. Mr. Leavitt was confident that if taken to the Breeders' meeting at Lexington, Ky., and started under favorable conditions, he could beat the world's two-year-old trotting record, but Mr. Forbes did not care to run the risk, so Bingen was sent to Ponkapog soon after the Rigby meeting and wintered there.

In the spring of 1896 Bingen did a limited amount of stud service and was then put in training. He was started in five races that season. The first was at Rigby Park, Aug. 20. Bingen stood 2, 2, 3 in the summary. The time of the winner in these heats was 2:13, 2:14, 2:18. He was started at Roadville, Aug. 26, but the track did not suit him. He won first and second heats easily in 2:19, 2:13, but a bad break in the third heat left him behind the flag at the finish. His next start was at Rigby Park, Sept. 24. He won first money there, taking first third and fifth heats in 2:13, 2:12, 2:13. He started again at Roadville, Oct. 2, but a losing break in the second heat placed him behind the flag again. Six

days after his race at Roadville Bingen was started in the Transylvania Stake at Lexington, Ky., but the colt was no, quite himself. Trainer Titer asked the master, J. H. E. F. Geers, to drive Bingen in this race, and by the joint request of both Mr. Forbes and trainer Titer, Mr. Geers did so, but the colt was off, and was drawn in the fourth heat. The following week, driven by Mr. Titer, Bingen won the three-year-old trot at the Lexington (Ky.) meeting, taking first, third and fourth heats in 2:13, 2:12, 2:15. Out of five starts that season he won first money twice and second once. He made a season in the stud, and was not started in 1897.

Last year Bingen went into training early and was started in his first race of 1898 at Dover, N. H., July 28. It was the 2:13 trot and there were seven starters. Squeezar finally won the race, but it required eight heats to decide the event. Bingen got second money. He was second at the finish of the third heat in 2:12, won the fifth and seventh heats in 2:14, 2:17 respectively, and was second the last heat in 2:18. He started next at Rigby Park, Aug. 23, in the 2:12 class and won, taking first, third and fourth heats in 2:09, 2:11, 2:10.



LADY GOLDEN (p.), 2:10 1-2.

TOMMY BRITTON, 2:09 1-4.

AMERICAN BELLE (s), 2:15 1-4.

MAZETTE (s p.), 2:17 1-4.

X. L., 2:13 3-4.

The fourth heat in 2:10 showed that he had plenty of endurance as well as speed. He met a field of eight others at Roadville, Aug. 29. He won the second heat in 2:09 and got second money. At Hartford, Ct., Sept. 9, he won the 2:13 trot, taking first, fourth and fifth heats in 2:09, 2:12, 2:12. At Rigby Park, Sept. 14, he won in straight heats; time, 2:08, 2:10, 2:08. At Roadville, Sept. 20, he won first and third heats in the 2:10 class, time 2:10, 2:12 respectively, and got second money.

From Roadville Bingen was shipped to Louisville, Ky., where he was started Sept. 26 in a field of nine in the 2:11 class. He won the first heat in 2:09, going to the half in 1:02 and was pulled up at the finish. Good judges believe that he could have trotted that heat in 2:08. He lost the next two heats in 2:07, 2:10, won the fourth in 2:09, lost the next in 2:12, but won the sixth and deciding heat in 2:11.

Oct. 10 he started in the 2:13 class at Lexington, Ky. There were eight others, and among them were John Nolan, Eagle Flannigan, Grattan Boy, Plutus, Dione, Caralla, etc. The first heat was won by Eagle Flannigan in 2:07, and Bingen finished second. It was evident that the unfavorable weather had affected him unfavorably, for he was not in as good form as he was at Louisville, and stood fifth in the summary at the close of the race.

Five days after the above race he started again at Lexington in the 2:11 class. The Abbott won in straight heats, time, 2:15, 2:08, 2:08. Bingen finished second in the last heat and got fourth money.

Bingen was never in better condition at this season of the year than at present. He was on exhibition at the Horse Show last week, where he competed in several classes and received the highest award in each of them. Those who have driven him enough to test his merits pronounce him one of the best of roadsters. He is fearless, cheerful driver, and attends strictly to business all the time. After all his fast miles, Bingen is as sound, smooth and free from blemishes today as when foaled. No horse can show cleaner limbs and joints or sounder feet than he. This is a great credit to the horse and his careful trainer, Mr. Titer. Bingen will be campaigned again this season, and if no accident befalls him we shall be disappointed if he does not take a faster record than now stands to the credit of any trotting stallion. He now holds the stallion record of the Electioneer family, and only one other trotting stallion in the world has ever beaten his present mark.

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